UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,473	03/13/2001	Kouichi Satoh	NOK-008	8781

20374 7590 12/19/2002

KUBOVCIK & KUBOVCIK
SUITE 710
900 17TH STREET NW
WASHINGTON, DC 20006

EXAMINER
WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
1745	5

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/804,473	Applicant(s) SATOH ET AL.	
	Examiner Wills M Monique	Art Unit 1745	

TG

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☒ Claim(s) *12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

Japanese foreign priority document(s) 2000-070927 filed March 14, 2000, 2000-292306 filed September 26, 2000 and 2000-362515 filed November 29, 2000 submitted under 35 U.S.C. 119(a)-(d), has/have been received and placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "striplike" is of uncertain meaning rendering said claims vague and indefinite. An appropriate correction is required.

Allowable Subject Matter

Claims 1-4 would be allowable over the prior art of record, once the 35 U.S.C. § 112 rejection is overcome, because the prior art is silent to a nonaqueous electrolyte secondary cell comprising a current collector having a plurality of circular-arc

protrusions projecting toward the collector edge and a plurality of slit pieces cut to a raised form toward the collector edge.

Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 12 would be allowable over the prior art of record, because the prior art is silent to a current collecting plate being provided with a collecting member projecting therefrom and having elasticity so as to move toward or way from the electrode terminal portion.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey U.S. Patent 6,287,719, in view of DePalma et al. U.S. Patent 5,532,081 and further in view of Ligeois et al. U.S. Pub 2001/0023038.

Bailey teaches a spirally-wound electrode assembly 30 comprising a positive electrode 52 and negative electrode 60 (col. 3, lines 64-67). The negative electrode 60 includes a current collector 61 being coated on each side (co. 4, lines 7-20). The positive electrodes 52 includes a current collector 51 coated with cathodic material on

each side (col. 4, lines 15-25). The leading end or protrusion 54 of the positive current collector is left uncoated and exposed such that a conductive tab 56 may be welded thereto (col. 4 lines 28-31). The conductive tab 56 is configured to be electrically coupled to an exterior contact terminal of the cover assembly (col. 4, lines 35-40). The negative electrode has a trailing end 82 left exposed so that a second conductive tab 82 may be welded thereto (col.4 lines 35-40). The second conductive tab 86 extends from an opposite end of the spiral-wound electrode assembly so as to be electrically connected to the closed end 12 of the housing. The electrodes are layered with separator material in between, rolled-up (fig. 3) and covered with a current collecting plate (Fig. 2).

The reference is silent to the collecting plate having a skirt portion being connected to one of the electrode terminals. Further the reference is silent to the skirt portion being in the form of a cylinder intimately fittable to the outer peripheral surface of the cylindrical projection of the rolled-up electrode unit. The reference is also silent to laser welding the skirt portion to the rolled-up electrode unit. The reference is also silent to the collector plates and collector portions being made of the same material.

However, Depalma teaches a current collecting plate 112 made of metal having a skirt portion 118 being connected to the electrode terminal 114 by a lead member (Fig. 2 and col. 6, lines 10-25). The collector also serves a sealing plate and exerts a seal radially outward to maintain seal integrity over a wide range of operating temperatures (abstract). The collecting plate has a skirt portion 119 being connected to

one of the electrode terminals (fig. 3). The current collecting plate is intimately fittable to the outer surface of the cylindrical projection containing the electrode unit (Fig. 3).

Ligeois teaches a spiral-wound electrode assembly comprising a current output terminal (par.41). The battery has a skirt 6 that intimately fits around the circumference of the current collecting tabs 2 (fig. 1). The skirt is welded to the rolled-up electrical unit by laser welding (par.39). The reference teaches that laser beam welding moves progressively and continuously along a weld line providing an effective weld at a fast rate. The reference also suggests that it is advantageous to use the same material for the collector plate and collector portions to improve the welding connections (par. 66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a skirt portion in the cell of Bailey in order to, as taught by Deplama, exert a seal radially outward to maintain seal integrity over a wide range of operating temperatures.

As to laser welding the skirt portion to the rolled-up electrode unit, it would have been obvious to one of ordinary skill in the art at the time the invention was made to laser weld, as Ligeois teaches laser welding the skirt to said unit provides a continuous weld at a fast rate.

Regarding the material of the current collector plate and current collector portion being the same, Ligeois teaches that it is advantageous to do so to improve the welding connections.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey U.S. Patent 6,287,719 and further in view of Yanai et al. U.S. Patent 6,235,426.

Bailey teaches a spiral-wound electrode as recited hereinabove. The reference also teaches a base plate adjacent to the terminal cap 14 in Fig. 2.

The reference is silent to a current collection plate having a male screw projection being in screw-thread engagement with an internally threaded portion of the terminal. The reference is also silent to the male screw being integral with the current collecting plate and providing the screw on a base plate.

However, Yanai teaches a male screw portion 91 projecting toward the electrode terminal portion 92. The screw is engaged with an internally threaded portion 96 formed in the electrode terminal portion 92. See Fig. 3. The screw is provided on a base plate. See fig. 6. The reference suggests that the screw member has dual functionality providing secure attachement to additional devices (col. 1, lines 45-55) and delivering current to the external device (col. 1, lines 25-30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the male screw projection of Yanai in the cell of

Bailey to simultaneously secure attachments to additional devices (col. 1, lines 45-55) and deliver current to the external device (col. 1, lines 25-30).

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 703-308-2383.

The unofficial fax number is (703) 305-3599. The Official fax number for non-final amendments is 703-872-9310. The Official fax number for after final amendments is 703-872-9311.

Mw

12/15/02

Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700